

Work Order ID 141200

Monday, February 01, 2016 7:47:23 AM

141200

Page 1

Item ID: D6101-001

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Saddle Billet

Start Date: 2/1/2016 Start Qty: 40.00

40

Cust Item ID:

Required Date: 2/8/2016 Req'd Qty: 40.00

40

Customer:

Reference:

Approvals: Process Plan: MLJ Date: FEB 01 2016

Tooling:

Date:

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
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D6101	Rev B
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100

0.00

100

PURCHASING

Purchasing

Memo

0.00

Purchasing

Issue P/O: 31199

a) Description: Alluminum billet

b) 6.00" x 6.250" x 2.00" thick

c) Tolerance on length are +0.030"/-0.000" $\pm$ -0.008"

d) Grain direction along 6.00" length

e) Material: 7075-T7351 (QQ-A-250/12)

f) Material certification required

40FEB 01 2016**DAS
13
9-89**

110

Receive & Inspect for Damage & Mat'l Certs

0.00

110

Packaging

Memo

0.01

Packaging

Ensure material certification is attached

40x. 8016-02-17

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

Work Order ID 141200

Monday, February 01, 2016 7:47:23 AM

141200

Page 2

Item ID: D6101-001 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Saddle Billet
Start Date: 2/1/2016 Start Qty: 40.00 ***40*** Cust Item ID:
Required Date: 2/8/2016 Req'd Qty: 40.00 ***40*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC6- Inspect dimensions to drawing	0.00				40	0		DAS 14 9-00 16/02/18
120									
QC	Memo	0.00							
Quality Control	Ensure Material certification comply to Dwg D								
130	Identify as per dwg & Stock Location: MAT042	0.00				40	0		DAS 14 9-00 16/02/18
130									
Packaging	Memo	0.01							
Packaging	LOCATION: MAT042								
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.07							
Quality Control									

MWJ
FEB 19 2016
FEB 18 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : ☐							
Misidentified ☐	Past Due ☐								

Picklist Print

Monday, February 01, 2016 7:47:26 AM

Page 1

Work Order ID: 141200

141200

Parent Item: D6101-001

D6101-001

Parent Item Name: Saddle Billet

Start Date: 2/1/2016

Required Date: 2/8/2016

Start Qty: 40.00

Required Qty: 40.00

Comments: IPP B: 01.05.04New IssueC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D6101-001P

Purchased

No

110

Each

0.0000

1

40

D6101-001P

**

7075-T7351 2X6X6.25

40x 8p16-02-17

DQA: _____ Date: _____



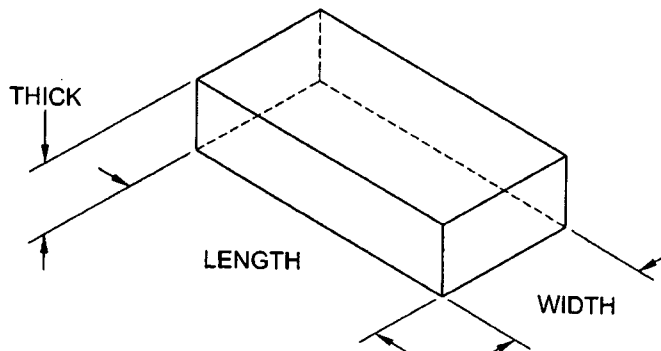
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval	
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐				
		OTHER : ☐							

SPECIFICATION CONTROL DRAWING



PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.030/-0.000), AND GRAIN DIRECTION AS SHOWN.

TOLERANCES ON ALL DIMENSIONS ARE +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES.

B ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6101-001	7075-T7351 (QQ-A-250/12)	6.000	6.250	2.000	Along 6.000 Length
D6101-003	7075-T7351 (QQ-A-250/12)	7.875	6.250	2.000	Along 7.875 Length
D6101-005	7075-T7351 (QQ-A-250/12)	5.000	8.250	2.500	Along 5.000 Length
D6101-007	7075-T7351 (QQ-A-250/12)	7.750	8.250	2.500	Along 7.750 Length
D6101-009	7075-T7351 (QQ-A-250/12)	8.700	8.250	2.500	Along 8.700 Length
D6101-011	7075-T7351 (QQ-A-250/12)	9.700	8.250	2.500	Along 9.700 Length
D6101-013	7075-T7351 (QQ-A-250/12)	10.100	8.250	2.500	Along 10.10 Length
D6101-015	7075-T7351 (QQ-A-250/12)	9.450	6.250	2.500	Along 9.450 Length
D6101-017	7075-T7351 (QQ-A-250/12)	6.350	6.250	2.250	Along 6.350 Length

RELEASED
09/07/15/W

16-02-01
 10141200 M5
 UNCONTROLLED
 REVISION
 10141200 M5

B	ADDED D6101-015/-017, ADD ASTM B209	RF	09.04.23
A	NEW ISSUE	CP	01.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	CP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	 	DRAWING NO. REV. B	
MFG. APPR.		D6101 SHEET 1 OF 1	
APPROVED		TITLE SCALE	
DE APPR.		SADDLE BILLET, 7075 NTS	
DATE	09.04.23	COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																									
Description Work Order Deviation				Disposition																																																													
Root Cause		FAULT CATEGORY																																																															
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Misidentified ☐	Past Due ☐																																																																



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO31199

Purchase Order Date 2/1/2016

PO Print Date 2/1/2016

Page Number 1 of 2

Order From :

VU-MET002

Ship To : DART AEROSPACE LTD

METAUX CASTLE
P.O. BOX 4090 STN A
TORONTO, ONTARIO M5W OE9
CANADA

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA



Contact Name

Buyer

Chantal Lavoie

Vendor Phone

Customer POID

Customer Tax #

10127-2607

Ship To Contact

Terms

Net 30

Ship To Phone

Currency

USD

Ship Via:

Yours ppd

FOB

Destination-Collect

Ship Acct:

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
	D6101-001P	7075-T7351 2X6X6.25	2/15/2016 Yes 2/15/2016		40.00 Each	\$26.88	\$1,075.20
	AS PER DWG D6101 REV. B B141200 SIZE: 6.00" X 6.250" X 2.00" THICK GRAIN DIRECTION ALONG 6.00" LENGHT MATERIAL: 7075-T7351 QQ-A-250/12 TOLERANCE AS PER QUOTE +.030"/-.000"						
	Line Total:						\$1,075.20
2	D6101-003P	7075-T7351 2X6.25X7.875	2/15/2016 Yes 2/15/2016		20.00 Each	\$35.29	\$705.80
	AS PER DWG D6101 REV. B B141201 SIZE: 7.875" X 6.250" X 2.00" THICK GRAIN DIRECTION ALONG 7.875" LENGHT MATERIAL: 7075-T7351 QQ-A-250/12 TOLERANCE AS PER QUOTE +.030"/-.000"						

SP/16-02-17

Note:

**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP/
CERTIFICATE OF CONFORMANCE

Page 1 of 2

Shipment No:2885967

Ship From: A. M. CASTLE & CO. 2150 ARGENTIA ROAD MISSISSAUGA, ON L5N 2K7 CAN		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped 16-FEB-16	F.O.B. ORIGIN	Freight Terms Prepaid		Carrier MANITOULIN		BOL No 2885967-2	

Shipment Details	Final Destination Branch - TOR
-------------------------	---------------------------------------

Order No 4235932	Line No 1	Item No 752237 MO	Description 2.0000.PL.7075.T7351.ALUMINUM.USI.48.5000.144.5000 CUT 2SIDED TO 6.25 IN (+ .0310/- .0000 IN (GRAIN TO RUN ALONG 6")) X 6 IN (+ .0310/- .0000 IN (GRAIN TO RUN ALONG 6")) - ALUMINUM PLATE SAW SPECIFICATIONS: AMS-QQ-A-250/12				
Purchase Order No 31199		Part Number YOUR ITEM NUMBER: D6101-001	Ordered Qty 40.00 PCS			Invoice Qty 40.00 PCS	
Details		ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #S Email P/s and certs to: clavoie@dartaero.com END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS					
Delivery No. 120335941	Mill KAISER ALUMINUM	Heat Number 	Mech Id	PCS 40	Width (IN)	Length (IN)	Shipped Qty(LBS) 309.6638

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned.

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law prohibited.

Date Printed: 16-FEB-2016 05:03:40 PM



Castle Metals®

A. M. Castle & Co.

PACKING SLIP/
CERTIFICATE OF CONFORMANCE

Page 2 of 2

for credit.			
Reviewed by Authorized Castle Metals Representative:	<i>Shirley A. Khan</i>	Date:	Name:

FEB 16 2015



SP/6-02-17.

SHIP TO:

A M CASTLE & CO
14001 ORANGE AVE
P.O. BOX 1402
PARAMOUNT, CA 90723

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4400303

SOLD TO:

AM CASTLE & CO- SOLD TO
1420 KENSINGTON RD
SUITE 220
OAK BROOK, IL 60523

CUSTOMER PO NUMBER: 344019		WORK PACKAGE:		CUSTOMER PART NUMBER: 752237		SHIP RUN/LOAD: 103411/12		GOV'T CONTRACT NUMBER:		
KAISER ORDER NO: 1199126		LINE ITEM: 1	SHIP DATE: 9-DEC-2015		ALLOY: 7075	CLAD: BARE	TEMPER: T7351	PRODUCT DESCRIPTION: KaiserSelect Plate		
WEIGHT SHIPPED: 7178 LB		QUANTITY: 5 PCS EST.		TRUCK B/L #: 2057454		GAUGE: 2.0009 IN (50.8000 MM)		DIAMETER/WIDTH: 48.500 IN (1231.9 MM)		LENGTH: 144.500 IN (3670.3 MM)

MHU 1954066: LOT 159084B3: 3 pieces;
MHU 1954067: LOT 159084B3: 1 pieces;
MHU 1955307: LOT 159182B5: 1 pieces;

DAS
14
9-89

16/02/18

Certified Specifications



AMS 4078/RevJ
ASTM B 209/Rev14
BSS 7055/RevB
DPS 4.713/RevAK
MMS 159/RevT

AMS 20-A-250/12/RevA
ASTM B 594/Rev13
CMMP 025/RevU
GAMPS 9101/RevB/AmdSCN1
PS 21211/RevM

AMS-STD-2154/RevA
BAC 5439/RevJ
CSTI 006/RevE
GSS16100/RevG/Amd1

Test Code: 4297

Test Results

Lot: 159084B3 Cast 895 Drop 54 Ingot 2 Melted in USA

(ASTM E8/B557)
(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	71.4 : 74.1 (492 : 511)	61.2 : 63.7 (422 : 439)	12.3 : 12.4

(ASTM E1004)
(EN 2004-1)

Conductivity %IACS :	39.7 Min	40.9 Max
(MS/M) :	23.0 Min	23.7 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual(wt%)	0.09	0.19	1.5	0.04	2.5	0.20	5.7	0.03	0.01	0.01	TOT 0.05

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4400303

Lot: 15918285

Cast 895

Drop 48

Ingot 2

Melted in USA

(ASTM E8/B557)

(EN 2002-1)

Tensile:

Temper
T7351

Dir / # Tests

LT / 2 (Min:Max)

Ultimate KSI (MPA)

71.6 : 72.0

(494 : 496)

Yield KSI (MPA)

59.9 : 60.7

(413 : 419)

Elongation %

11.9 : 11.9

(ASTM E1004)

(EN 2004-1)

Conductivity %IACS :

39.9 Min

40.3 Max

(MS/M) :

23.1 Min

23.4 Max

(ASTM E1251)

Chemistry:

Actual(wt%)

SI

FE

CU

MN

MG

CR

ZN

TI

V

ZR

OTHER

0.09

0.18

1.5

0.05

2.4

0.20

5.7

0.03

0.01

0.01

TOT

0.05

ALLOY LIMITS

	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075												
MIN(wt%)	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX(wt%)	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

ORDER COMMENTS

AMC CA-15413A R 7

AMS 4078,AMS QQ-A-250/12,AMS STD-2154,A

STM B209,ASTM B594,BS

S 7055,CMMP 025,CSTI 006,DPS 4.713,GAMP

S 9101,MMS 159,PS 212

11

TEST NOTES

Metal represented by this test report was 100% immersion
ultrasonically tested from one side with 3mm dead zones top
and bottom and meets the Class A and Class B requirements of
all specifications referenced on this test report. No
surface marking of sonic indications is performed.

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

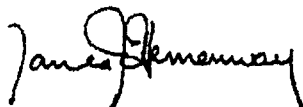
Serial Number
4400303

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC (Kaiser), is ISO-9001:2008/AS9100C certified and hereby certifies that all material shipped under this order:

- has been inspected, tested, and found to be in conformance with the requirements of the specifications indicated herein. For material thicknesses outside specification limits, mechanical properties are as shown herein and chemical composition meets specification requirements.
- was melted in the United States of America or a qualifying country per DFARS 225.672-1(a), was manufactured in the United States of America, and meets the requirements of DFARS 252.225 for domestic content.
- has been thermally processed in compliance with AMS 2772, where applicable.
- is mercury free, within the limits of detection of ASTM E1251 ($< = 1$ ppm).
- is in compliance with RoHS 2, European Union Directive 2011/65/EU.
- is in compliance with and regularly monitors any updates to the European Chemical Agency, ECHA, REACH regulations, (EC) n°1907/2006.
- is free of Conflict Minerals, as defined in Section 15.2 of the Dodd-Frank Act.

Any warranty is limited to that shown on Kaiser Aluminum's standard general terms and conditions of sale. Test reports are on file, subject to examination. Test reports shall not be reproduced except in full, without the written approval of the Kaiser Aluminum laboratory. The recording of false, fictitious or fraudulent statements or entries on the certificate may be punished as a felony under federal law.



JAMES HEMENWAY, LABORATORIES SUPERVISOR

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: DL6101-001
 DATE: 16/02/18

PO / BATCH NO: 31199/141200

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 40
 QUANTITY INSPECTED: 40
 QUANTITY REJECTED: _____

THICKNESS ORDERED: 6.00X6.25X2.00
 THICKNESS RECEIVED: 6.00X6.25X2.00
 SHEET SIZE ORDERED: _____
 SHEET SIZE RECEIVED: _____

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y ☒	
CORRECT FINISH	☒ N	
CORROSION	Y ☒	
CORRECT GRAIN DIRECTION	☒ N	
CORRECT MATERIAL	☒ N	
CORRECT THICKNESS	☒ N	
PHOTO REQUIRED	Y ☒	
CORRECT MATERIAL	☒ N	
CORRECT REF # TO LINK CERT	☒ N	
CORRECT MATERIAL IDENTIFICATION	☒ N	
CORRECT M# ON THE MATERIAL	☒ N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y ☒	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y ☒	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW				
	HRC	HRB	DUR A	DUR D
TYPE OF MATERIAL				
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>14</u> DATE: <u>16/02/18</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

INSTRUCTIONS FOR INSPECTING BAR, TUBING, ROUND, & SHEET STOCK

- 1- VERIFY STOCK TO DART PURCHASE ORDER
- 2- MEASURE ALL DIMENSIONS FOR EACH PURCHASED STOCK
 - a WIDTH, THICKNESS, DIAMETER, WALL THICKNESS & LENGTH
- 3- VERIFY CONDITION OF MATERIAL i.e. DAMAGED, CORRODED, etc.
- 4- VERIFY THAT SUPPLIER HAS A NUMBER (HEAT #) ON ITS RECEIVING REPORT TO LINK TO MATERIAL CERTS
- 5- VERIFY MATERIAL CERTS ARE CORRECT TO THE DART PO INSTRUCTIONS
- 6- REMOVE / CUT A PIECE OF MATERIAL FOR SAMPLE HARDNESS TESTING

INSTRUCTIONS FOR INSPECTING SKIDTUBE & STEP EXTRUSION

- 1- VERIFY TO DART SUPPLIED DRAWING
- 2- SAMPLE INSPECT MATERIAL IN BUNDLE TO ENSURE MATERIAL CAN BE RECEIVED INTO DART
- 3- USING PORTABLE HARDNESS TESTER VERIFY HARDNESS OF THE MATERIAL TO THE DRAWING
- 4- VERIFY THAT MATERIAL CERTS MATCH TO WHATS CALLED UP ON THE DART DRAWING

AFTER MATERIAL PASSES INSPECTION

- 5- HAVE DART EMPLOYEES START STOCKING MATERIAL BUT REQUEST MIN 20pcs FOR FULL INSPECTION
- 6- INSPECT ALL DIMS AS PER DRAWING REQUIREMENTS

INSTRUCTIONS FOR INSPECTING CROSS TUBE MATERIAL

- 1- VERIFY MATERIAL CERTS MATCH THE REQUIREMENTS ON THE DART DRAWINGS
- 2- INSPECT MIN HALF THE BATCH OF EXTRUSION RECEIVED INTO DART
- 3- INSPECT MATERIAL AS PER THE EXTRUSION REPORT
 - a WALL THICKNESS USING ULTRA-SONIC IN 4 LOCATIONS
 - b OUTSIDE DIAMETER HIGHEST/LOWEST BOTH ENDS
 - c INSIDE DIAMETER HIGHEST/LOWEST BOTH ENDS
 - d STRAIGHTNESS @ CENTER OVER 12" SPAN
 - e WALL THICKNESS USING TUBE MICROMETER HIGHEST/LOWEST BOTH ENDS
- 4- IDENTIFY EACH TUBE IN SEQUENCE OF INSPECTING (TUBE 1, TUBE2, ...) AND W/O# AND PO#
- 5- RECORD ALL FINDINGS ON EXTRUSION REPORT

IF ANY QUESTIONS PLEASE SEE QC COORDINATOR BEFORE GOING FURTHER